Student Learning Objectives
Anatomy of an SLO

Student Learning Objectives Training Series
Deck 2 of 3

Agenda

- Anatomy of an SLO
  - Objective
  - Rationale
  - Aligned Standards
  - Instructional Interval
  - Students Covered
  - Baseline Data
  - Targets
  - Rationale for Targets
  - SLO Assessment
- SLO Development Toolkit Resources

Session Objectives

- By the end of this session, participants will be able to:
  - Identify the 9 key criteria for SLOs.
  - Build familiarity with, and locate online, SLO Development Toolkit Resources to aid in the various steps of the process.

Review and Preview

- We have covered:
  - An introduction to Student Learning Objectives.
- Next, we will cover:
  - The components of a Student Learning Objective.
  - The template for communicating Student Learning Objectives and supporting implementation tools.

With the use of Student Learning Objectives, teachers and evaluators work together to determine how content is prioritized so that they can establish clear expectations for how student learning is assessed.

The Anatomy of an SLO

Anatomy of an SLO

Criteria	Description
1. Objective	Identifies priority content and learning that is expected.
2. Rationale	Provides a data-driven and/or curriculum-based explanation for the objective.
3. Aligned Standards	Specifies the standards with which the objective is aligned.
4. Instructional Interval	Specifies the time period for which the objective is planned.
5. Students Covered	Specifies the number and class of students to whom the objective applies.
6. Baseline Data	Describes students' baseline knowledge, including the source(s) of data used.
7. Targets	Describes where students are expected to be at end of instructional interval.
8. Rationale for Targets	Explains how the target was determined, including the data source.
9. SLO Assessment •Evidence •Administration •Scoring	Describes which assessment will be used to measure student learning: •Explains why the assessment is appropriate. •Describes how the assessment is administered. •Describes how the evidence is collected and scored.

A Note on the Following Slides

The slides that follow take you through explanations of the 9 key SLO criteria. Each element is explained in more depth and explored through an example from a 2nd grade social studies class, a 7th grade math class and a high school chemistry class. Some are accompanied by further explanation where necessary.

SLO Criteria #1: Objective

Identifies the priority content and learning that is expected during the interval of instruction. The objective statement should be broad enough that it captures the breadth and depth of content of an extended instructional period, but focused enough that it can be measured.

Objective Example

Elementary School •2nd Grade Social Studies	Students will demonstrate an understanding of: (1) U.S. government (local, state, national) by identifying titles/basic roles at different levels of government (e.g., mayor, governor, president) (2) the democratic values and principles underlying the U.S. government by (a) identifying symbols and national holidays used to depict Americans' shared democratic values, principles, and beliefs (e.g., American flag, Independence Day) and (b) using a variety of sources (e.g. picture books, songs, artwork) to illustrate the values and principles of democracy (e.g., Statue of Liberty represents freedom).
Middle School •Math	Students will demonstrate mastery of proportional relationships and operations with rational numbers, two critical elements of the revised 7th grade district curriculum aligned to the Common Core State Standards.
High School •Chemistry	Students will be able to describe the composition, structure, and properties of matter, draw conclusions about the interactions and conservation of matter and energy, and explain why matter and energy can neither be created nor destroyed in a given system and/or reaction.

Types of Objectives

Class Objective

- A goal that covers ALL students in the course.
- Is based on students' starting points.
- Ensures that no student "falls between the cracks" when teachers set their goals.

Selective Objective

- A goal set specifically for students who are significantly behind their peers.
- Ensures that the teacher focuses attention on the specific, unique learning needs of the most struggling students.

A Note on Types of Objectives

Whether a teacher decides to create only Class Objectives, or a combination of both Class and Selective Objectives, all of the students in the class must be covered by the SLOs.

SLO Criteria #2: Rationale

Provides a data-driven and/or curriculum-based explanation for the focus of the Student Learning Objective.

Rationale Example

Elementary School •2nd Grade Social Studies	Our curriculum builds upon the gr. 1 curriculum by reinforcing students' understanding of community (people in a community work together, people have different jobs/roles, communities have rules to ensure safety and fairness). This Objective focuses on enhancing students' understanding of country by exploring symbols and holidays that are part of our national identity. In addition, it requires students to use CCSS grade-level literacy and research skills to explore nonfiction texts to build an understanding of the shared values and principles of democracy. The dual focus on both the "big ideas" of a democratic society (freedom, equality) and the basic structure of a democratic government lays a strong foundation for future study.
Middle School •Math	Given that the Common Core State Standards are new and more rigorous, it is imperative that all students demonstrate mastery of the 7th grade curriculum, thus positioning them for success in grade 8, future work in linear relationships in Algebra, and beyond.
High School •Chemistry	Chemistry is the study of matter and its composition, structure, and properties. Understanding that matter makes up all substances both living and non-living, how matter interacts, and the concept of conservation of matter are central to this course. These enduring understandings are a bridge between the physical sciences, life science, and earth and space science.

SLO Criteria #3: Aligned Standards

Specifies the standards (e.g., CCSS, DC Learning Standards, or other state or national standards) with which this objective is aligned.

Aligned Standards Example

Elementary School •2nd Grade Social Studies	C&G 2 (K-2)-2.a RI.2.9 C&G 2 (K-2)-1.a W.2.7 C&G 2 (K-2)-1.b
Middle School •Math	7.RP.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. 7.RP.2. Recognize and represent proportional relationships between quantities. 7.RP.3. Use proportional relationships to solve multistep ratio and percent problems. 7.NS.1. Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.
High School •Chemistry	This objective is aligned to the RI GSE for Physical Science: PS2 (9-11) INQ + SAE-6: Using information provided about chemical changes, draw conclusions about and explain the energy flow in a given chemical reaction (e.g., exothermic reactions, endothermic reactions).

SLO Criteria #4: Instructional Interval

The instructional interval specifies the time period for which the objective is planned. Objectives typically are planned to capture either year-long or semester-long growth.

Instructional Interval Example

Elementary School •2nd Grade Social Studies	This objective will be met over the course of the full school year, with the items in the portfolio being developed over the course of the year.
Middle School •Math	The objective will be met over the course of the year. Students will begin their final projects to demonstrate proficiency in the spring.
High School •Chemistry	The interval of instruction is the full school year.

SLO Criteria #5: Students Covered

Specifies the number of and grade/class of students to whom this objective applies.

Students Covered Example

Elementary School •2nd Grade Social Studies	This objective applies to the 24 second grade students enrolled in my second grade class.
Middle School •Math	This objective applies to the 78 in the school's 7th grade.
High School •Chemistry	This objective applies to the 71 students in my three sections of College Prep Chemistry.

SLO Criteria #6: Baseline Data

Describes students' baseline knowledge, including the source(s) of data and its relation to the overall course objectives. If baseline data is not available for the student population that the Student Learning Objective covers, data about a similar student group (such as students taught in a previous year) or national expectations about student achievement in this area may be referenced.

Baseline Data Example

Elementary School •2nd Grade Social Studies	To determine students' understanding of community and country, I conducted individual conferences with each student in which I asked the same series of questions. I scored their answers on a rubric to assign an overall score for each student.
Middle School •Math	Students enter our school as 7th graders from as many as 3 dozen elementary schools across the city. As such, there is sometimes a delay in gathering the data on prior performance. In order to get a sense for their familiarity with the content, I administered a pre-test to determine familiarity with the concepts of proportional relationships and operations with rational numbers.
High School •Chemistry	In order to gauge students' incoming content knowledge, I administered the Chemical Concepts Inventory during the first week of school. It is a multiple choice instrument composed of one- and two-tiered non-mathematical conceptual questions based on common student misconceptions about general chemistry topics. Group A = 12 students who scored <10% on chemistry inventory Group B = students who scored between 11% and 49% on chemistry inventory Group C = students who scored > 50% on chemistry inventory

SLO Criteria #7: Targets

Describes where the teacher expects students to be at the end of the interval of instruction. The performance target should be measureable and rigorous, yet attainable for the interval of instruction. In most cases, the performance target should be tiered (differentiated) so that it is both rigorous and attainable for all students included in the Student Learning Objective.

Targets Example

Elementary School •2nd Grade Social Studies	Target: 24/24 (100%) students will complete portfolios with an overall score of 4 or better (a passing score on the 7-point rubric developed by the 2nd grade team). 12/24 (50%) students will complete portfolios with an overall score of 5 or better. 4/24 (approx. 17%) students will complete portfolios with an overall score of 6 or better.
Middle School •Math	Approximately 70% of the final exam assesses the two critical areas; data from these questions will be pulled to determine student progress. The tiered targets are as follows: • 25% of students will show mastery of both critical areas on both the test and project (earning 85% or higher) • 70% of students will show proficiency of both critical areas on both the test and project (earning 70%-84%) • The 4 students (5%) who scored below a 40 on the baseline assessment will show a 25% increase by the end-of-year test and project.
High School •Chemistry	Unit tests: Group A = students will pass 4 out of 5 unit tests with a score of 65% or better. Group B = students will pass 4 out of 5 unit tests with a score of 75% or better. Group C = students will pass 4 out of 5 unit tests with a score of 85% or better.

Targets Example (Continued)

High School (Continued) •Chemistry	Performance task: a. Group A = students will demonstrate basic proficiency (a score of 3 or better) b. Group B = students will demonstrate proficiency (a score of 4 or better) c. Group C = students will demonstrate advanced understanding (a score of 5 or better)

Please note: The Middle School Math & High School Chemistry examples on this slide and the one before it are examples of “tiered” performance targets.

Types of Targets

Mastery Targets

- Students are required to demonstrate a specified level of skill or content knowledge regardless of data collected from baseline measures.
- Most appropriate for courses where students are expected to begin with very little prior knowledge and develop content knowledge over time.

Growth Targets

- Students are required to make a certain amount of progress toward a clear benchmark of performance.
- Most appropriate for courses where students begin with prior knowledge and gain knowledge, skills and understanding over the interval of instruction when compared to a common scale over time.

A Note on Types of Targets

Teachers may opt to set either a Mastery or Growth Target for their students. Targets describe where the teacher expects students to be at the end of the interval of instruction. Targets can be described in terms of absolute numbers, percentages, rubric –levels, or other ending points on an assessment.

SLO Criteria #8: Rationale for Targets

Explains how the target was determined, including the data source (e.g., benchmark assessment, historical data for the students in the course, historical data from past students) and evidence that the data indicate the target is both rigorous and attainable for all students. Rationale should be provided for each target.

Rationale for Targets: Example

Elementary School •2nd Grade Social Studies	I have based these predictions on the relative distribution of scores from last year's class. I feel confident that all students will pass the portfolio as I will provide appropriate scaffolds for students who may struggle with various components of the assignment (i.e. graphic organizers for conducting research and preparing note cards, visual prompts for presenting). Additionally, I know that I have 3-5 high-performing students whose reading, writing, and oral language skills are markedly stronger than their peers. Therefore, I expect that they will be able to perform very well (6 or better) on this assignment.
Middle School •Math	This target is my best estimate based on the fact that the standards and curriculum are new. I expect that through targeted instruction in small-groups, strategic co-teaching and spiraling for students on IEPs that all students will be able to reach these targets and leave the 7th grade with the necessary proficiency to be successful in the 8th grade. Beyond monitoring class work, homework, quizzes, and tests, more formal quarter assessments that mirror the expectations of the final exam will be given to monitor student's progress.
High School •Chemistry	These targets are tiered to reflect students' varying levels of prior knowledge upon entry into CP Chemistry. They are rigorous in that all students are expected to be able to demonstrate basic proficiency on almost every unit test and on the performance task. Based on what I have seen similar students accomplish on similar assessments in past years, I am confident that my students will show significant progress in their understanding of these core chemistry concepts, and be able to demonstrate that understanding, by the end of the interval of instruction.

SLO Criteria #9: Assessment

Describes which assessment(s) will be used to measure student learning, why the assessment(s) is appropriate for measuring the objective, and its level of confidence and commonality.

Assessment: Example

Elementary School •2nd Grade Social Studies	Evidence: Students will build a portfolio of work to demonstrate proficiency on this Objective. The portfolio will include: • 4-6 short written assessments (in-class assignments on roles, structure, symbols, holidays, etc.) • 2 compare/contrast t-charts of informational texts (RI.2.9) about the United States government or democracy • 1 oral presentation with poster (W.2.7) about a government role (e.g. president, mayor), a national symbol (e.g. The Statue of Liberty), or a national holiday (e.g. Veteran's Day).
Middle School •Math	The final project in the spring requires students to integrate their new mathematical skills in creative ways that involve real-life problem-solving scenarios. Through multiple assessments I hope to create a more complete picture of what my students know and will be able to do. The project is graded on a 0-100 scale, like the test, for easy comparison.
High School •Chemistry	1) Unit Tests: Students will complete a written assessment at the end of each unit. Assessments will include multiple choice, short answer, and constructed response items. 2) Hydrated Salt performance task: This assessment requires students to plan, design, and carry out an experiment to determine the empirical formula for a hydrated salt that will tell students when all of the water has been removed.

Assessment Administration

Describes how the measure of student learning will be administered (e.g., once or multiple times during class or during a designated testing window by the classroom teacher or someone else).

Assessment Administration: Example

Elementary School •2nd Grade Social Studies	Students will build a portfolio of work, containing all components specified, over the course of the school year.
Middle School •Math	The project will be administered to all students throughout the last week of classes. The test will be administered during the final exam week.
High School •Chemistry	1) Unit Tests: The end-of-unit assessments will be administered in class by the teacher at the conclusion of each unit. 2) Hydrated Salt performance task: The performance task will be administered during the final week of classes in June. It is designed to be completed by students individually in an 80- minute block.

Assessment Scoring

Describes how the evidence will be collected and scored (e.g., scored by the classroom teacher individually or by a team of teachers).

Assessment Scoring: Example

Elementary School •2nd Grade Social Studies	• Written assessments will be developed collaboratively by the 2nd grade team and scored by each classroom teacher. • Oral presentations will be scored in class by the classroom teacher (using the collaboratively-developed rubric), but the posters will be reviewed and graded collaboratively by the second grade team.
Middle School •Math	The project and the test will be scored jointly by the other 7th grade math teacher, as we are sharing assessments. The Department Chair will double-score the first 10% of graded assessments to ensure we are calibrated. The rubrics for scoring constructed response questions will be provided to students in advance.
High School •Chemistry	1) The unit tests will be scored by the two chemistry teachers, using the scoring guide developed with the assessments. Our Department Chair has agreed to double-score one test from each section of CP Chemistry for each unit (6 per unit, 30 per year). 2) The performance task will be scored by the two chemistry teachers on a rubric developed with the task. The Department Chair will co-score 5% of the performance tasks from the 6 sections of CP Chemistry (approximately 8).

SLO Development Toolkit Resources

SLO Development Toolkit Resources

The slides that follow highlight several resources to aid in SLO development:

- *SLO Template* – For use by teachers when developing SLOs.
- *Approval Checklist* – For use by teachers and evaluators when reviewing SLOs for approval.
- *Scoring Guidance & Attainment Categories* – For use by evaluators when evaluating SLOs.

SLO Template

Criteria	Description
Objective	*What is the priority content and learning expected during the interval of instruction?*
Rationale	*What is the data-driven and/or curriculum-based explanation for the focus of the objective?*
Aligned Standards	*What are the standards with which this objective is aligned?*
Instructional Interval	*What is the time period for which the objective is planned?*
Students Covered	*How many students, and from what grade or class, does this objective apply to?*
Baseline Data	*Describe students' baseline knowledge, including the source(s) of data and its relation to the overall course objectives.*
Targets	*Describes where the teacher expects students to be at the end of the interval of instruction. In most cases, the target should be tiered (differentiated) so that it is both rigorous and attainable for all students included in the Student Learning Objective.*
Rationale for Targets	*Explains how the target was determined, including the data source and evidence that the data indicates the target is both rigorous and attainable for all students.*
SLO Assessment •Evidence •Administration •Scoring	• *Which assessment(s) will be used to measure student learning? Why are the selected assessment(s) appropriate for measuring the objective?* • *How will the measure of student learning be administered?* • *How will the evidence be collected and scored?*

Approval Checklist

The checklist distributed is designed for use by the evaluator during the Beginning of Year Conference. It highlights all necessary criteria for a highly effective SLO, and provides a space for the evaluator to indicate the approval status for each individual piece of criteria.

Scoring Guidance

School leaders or principals, with support from the school's additional instructional leadership, are responsible for rating or scoring teachers' progress toward meeting SLOs at the end of the school year. SLOs should be rated in one of four categories.

Attainment Categories

Exceptional Attainment

- This category applies when all students met the target(s) and many students exceeded the target(s). For example, exceeding the target(s) by a few points, a few percentage points, or a few students woulåd not qualify a Student Learning Objective for this category. This category should only be selected when a substantial number of students surpassed the overall level of attainment established by the target(s).

Full Attainment

- This category applies when almost all students met the target(s). Results within a few points, a few percentage points, or a few students on either side of the target(s) should be considered "Met". The bar for the category should be high and it should only be selected when it is clear that the students met the overall level of attainment established by the targets.

Partial Attainment

- This category applies when many students met the target(s), but the target(s) was missed by more than a few points, a few percentage points, or a few students. This category should be selected when it is clear that students fell just short of the level of attainment established by the target(s).

Minimal Attainment

- This category applies when the results do not fit the description of what it means to have "Nearly Met". If a substantial proportion of students did not meet the target(s), the Student Learning Objectives was not met. This category also applies when results are missing, incomplete, or unreliable.

Previewing Deck 3

- In this presentation, we walked through an example of an SLO and defined the components.
- In Deck 3, we will walk through the steps of the SLO development process and discuss the tools that can aid implementation.

Feedback

- Please take a moment to take a short survey. Your feedback is important to us!

https://www.surveymonkey.com/s/X63YL62

(For printable versions of this survey, please visit here.)

Learn More About SLOs

Please visit OSSE's SLO technical assistance page for more information about Student Learning Objectives and to find the SLO Toolkit with resources intended to aid in implementation.

To view sample SLOs and additional toolkit resources, visit www.learndc.org.